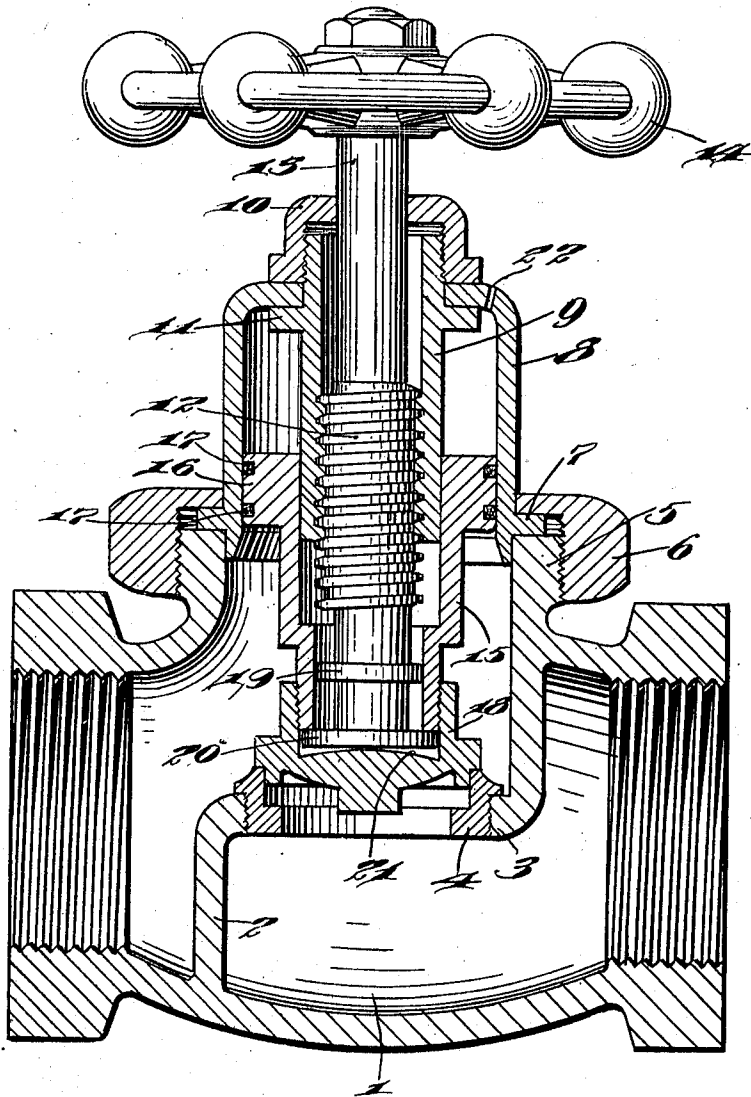


A. L. KERBAUGH.
 GLOBE VALVE.
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974,498.

Patented Nov. 1, 1910.



Witnesses

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ARTHUR L. KERBAUGH, OF ALLENTOWN, PENNSYLVANIA.

GLOBE-VALVE.

974,498.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ARTHUR L. KERBAUGH, a citizen of the United States, residing at Allentown, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Globe-Valves, of which the following is a specification.

My invention relates to improvements in globe valves, the object of the invention being to provide a valve of this type, which dispenses with the necessity for packing and in which the screw threads of the plunger are entirely inclosed, and the steam or water cannot possibly contact therewith to injure the threads.

One of the great defects of globe valves in general use is, that the screw threads soon become worn and strip, either from the action of steam thereon or from sand in the water cutting the threads. To overcome this defect, and to provide a valve in which the ordinary forms of packing are entirely dispensed with, is the aim of the present invention, and the same will now be described in detail.

With these and other objects in view, the invention consists in certain novel features of construction, and combinations and arrangements of parts, as will be more fully hereinafter described and pointed out in the claims.

The accompanying drawing, is a view in longitudinal section illustrating my improvements.

1, represents the valve casing, 2 a partition therein having a screw threaded opening 3, in its longitudinal portion, in which ring 4 is screwed, and constitutes a valve seat.

Casing 1, is open above the valve seat, and is provided with a screw threaded portion 5, to receive a cap ring 6, the latter clamping an annular flange 7, near the lower end of a hood 8, between said ring 6 and the casing 1.

The hood 8 is of general cylindrical form, having a central opening to receive the upwardly projecting end of a cylindrical barrel 9, the upper end of said barrel being screw threaded, and a cap ring 10 is screwed on to the upper end of the barrel, and down upon the hood 8, securely clamping the hood between the ring 10, and an annular flange 11 on the barrel 9.

The barrel 9 is internally screw threaded throughout a portion of its length, and the screw threaded portion 12 of the valve stem

13 engages the screw threads in barrel 9. This stem 13 projects upward through ring 10, and is provided with any suitable hand hold 14, to turn the stem.

15, represents a cylinder which is of two diameters as illustrated. The upper or larger diameter mounted to slide on the barrel 9, and this end of the cylinder is provided with an integral piston or ring 16, having suitable packing rings 17. The piston 16, moves between barrel 9, and hood 8, and the packing rings 17 insure a tight juncture between the piston and the hood preventing any passage of steam or water past the piston.

The smaller diameter of cylinder 15 is externally screw threaded to engage internal screw threads in a cup-like valve 18. The stem 13 is provided in the smaller diameter of cylinder 15, with an annular flange 19, and at the end of cylinder 15, with a disk or head 20, which is of a diameter greater than the internal diameter of this smaller end of the cylinder 15, and is positioned between the end of cylinder 15, and the bottom 21, of the recess in valve 18. It will be noted that this bottom 21, is convex in form, so that but a small contacting surface is provided to engage head 20, and this is done to prevent the valve from turning with the stem, which might tend to unscrew the valve.

With my improvements above described, it will be noted that the screw threaded portions of stem 13 and barrel 9 are entirely inclosed by the cylinder 15, and valve 18, so that no water nor steam can find its way into contact with the screw threads. It will also be noted that the piston 16, with its packing ring 17, will prevent any escape of steam or water through the hood 8, hence the ordinary form of packing around the valve stem is entirely dispensed with.

To allow the piston 16, to freely move in the hood 8, an opening 22 is provided in the end of the hood, which allows a free entrance and exit of air and prevents a compression of air or partial vacuum which might otherwise be caused by the movement of the piston.

When stem 13, is turned, it will cause cylinder 15 and valve 18, to move either toward or away from the valve seat 4. Barrel 9 remains stationary at all times, and the piston 16, which is an integral part of the cylinder 15, moves between the barrel 9, and the hood 8.

Various slight changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A globe valve, comprising a casing, having a valve seat therein, of a hood on the casing, an internally screw-threaded barrel in the hood, a screw-threaded stem in the barrel, a cylinder around the barrel, and a valve secured to the cylinder, said cylinder and valve constructed to move with the stem, and a piston of greater diameter than the cylinder and integral with the cylinder and movable in the hood, substantially as described.

2. A globe valve, comprising a casing, having a valve seat therein, of a hood secured on said casing, an internally screw-threaded barrel secured in the hood, a screw-threaded stem engaging the threads in the barrel, a cylinder around the barrel and surrounding the inner end of the stem, a valve on the end of the cylinder connected to the stem, and a piston on said cylinder of greater diameter than the cylinder and movable in contact with the inner face of the hood, substantially as described.

3. A globe valve, comprising a casing, a partition in the casing, having a screw-threaded opening therein, and a ring screwed into said opening constituting a valve seat, said casing having an opening in line with said valve seat, of a hood, a cap ring securing said hood on the casing, an internally screw-threaded barrel secured in the hood, and of smaller diameter than the hood, a cylinder movable on the barrel, a piston fixed to the cylinder and movable in the hood, a valve on the end of the cylinder adapted to close said valve seat, a screw-threaded stem engaging the threads in the barrel, and a head or flange on the end of the stem, located between the end of the cylinder and the valve, substantially as described.

4. A globe valve, comprising a casing, having a valve seat therein, of a hood, an annular flange around the hood, a cap ring engaging over said flange, and screwed on to the casing, said hood having an opening in its end, a cylindrical barrel located in said opening in the hood, an annular flange on the barrel, a cap ring screwed onto the barrel, and clamping the hood between the same and the flange on the barrel, said barrel having internal screw-threads, a screw-threaded stem in said barrel engaging the threads in the latter, a cylinder movable on the barrel, between the same and the hood, a valve screwed onto the lower end of the cylinder, and a flange or head on the lower end of the stem, located between the end of the cylinder and the valve, substantially as described.

5. A globe valve, comprising a casing, having a valve seat therein, of a hood, an annular flange around the hood, a cap ring engaging over said flange, and screwed onto the casing, said hood having an opening in its end, a cylindrical barrel located in said opening in the hood, an annular flange on the barrel, a cap ring screwed onto the barrel, and clamping the hood between the same and the flange on the barrel, said barrel having internal screw-threads, a screw-threaded stem in said barrel, engaging the threads in the latter, a cylinder of two diameters, the larger diameter mounted to move on the barrel, an integral piston on said cylinder, engaging the inner face of the hood, a flange on the valve stem in the smaller diameter of said cylinder, a flange or head on the lower end of the stem against the lower end of the cylinder, said cylinder externally screw-threaded at its smaller diameter, a valve having a screw-threaded recess therein, and a convex bottom in said recess, said valve screwed onto the cylinder, substantially as described.

In testimony whereof I have signed by name to this specification in the presence of two subscribing witnesses.

ARTHUR L. KERBAUGH.

Witnesses:

F. T. L. KEITER,
E. F. OSENBACH.